Humane Slaughter Association
The Old School, Brewhouse Hill, Wheathampstead
Herts, AL4 8AN, UK
Tel: +44 (0)1582 831919, Fax: +44 (0)1582 831414
Email: info@hsa.org.uk  Web: www.hsa.org.uk
Registered in England Charity No. 209563
ISSN 0264-8741

Humane Slaughter Association
Annual Report 2014–2015
Caring beyond the farm gate

The Humane Slaughter Association (HSA), established in 1911, is an independent charity that works through scientific and technical advances, education, and training towards achieving the highest worldwide standards in food animal welfare during transport, marketing, and slaughter.

To accomplish its aims the HSA provides:

- technical information and advice on all aspects of animal handling, transport, and slaughter
- training in humane methods of handling and slaughter of livestock for farmers, vets, abattoir staff, police firearms officers, and RSPCA Inspectors, students, and others
- educational and technical publications
- independent advice to governments, other welfare organisations and the food industry
- regular visits to markets and slaughterhouses, advising on improvements where appropriate
- funding for research projects
- development and application of scientific advances into industry working practices
- grants towards improvement of animal handling facilities in markets and slaughterhouses

Examples of the HSA’s wide range of activities in these areas are outlined in the following pages.

Chairman’s report

Welcome to the 2014-2015 Annual Report. This has been another very busy and productive year for the HSA and I am sure that you will read with interest the reports of the various activities and initiatives undertaken by the charity over the last 12 months.

Congratulations to the Danish Meat Research Institute as winner of the 2015 Humane Slaughter Award and to Jessica Martin (née Hopkins), the HSA’s 2011 Centenary Research Training Scholar, who successfully completed her PhD at Scotland’s Rural College into humane mechanical methods for killing chickens. Congratulations also to the Royal Veterinary College (RVC) and the University of Bristol for each being awarded an HSA Research Training Scholarship for 2015 to research into improved stunning methods, and to Emma King of the RVC on being awarded a Dorothy Sidney Memorial Scholarship to support her project on captive-bolt stunning of turkeys.

I would like to thank the staff for their hard work, especially Brian Pemberton, PR and Fundraising Officer, who retires after 10 years of service. Over the last year, HSA staff have undertaken an impressive range of practical research, education, training, advisory, and guidance activities aimed at improving the welfare of animals during transport, at markets and at the time of killing, not only in the UK but internationally. The HSA is unique in this regard and its work is greatly valued by a host of stakeholders concerned about the welfare of animals.

Finally, I would like to thank you, the HSA’s supporters, for supporting the important work of the HSA over the last year and for your continued support.

Chief Executive’s report

There are now over seven billion humans in the world and we keep a great number of animals to feed us. It was estimated that in 2013 there were one billion sheep, 1.4 billion cattle and 20 billion poultry in the world, and there are likely to be even more now. Almost all farmed animals kept for food will be slaughtered at some point and, to ensure that this is as humane as possible, research is often needed to determine the best methods. Yet, in spite of the numbers of animals affected, the number of projects carried out to develop more humane techniques is quite small, which means that the HSA can have a significant impact. For many years the HSA has given grants for small and medium projects, but in 2011 its first Research Training Scholarship was awarded to Jessica Martin (née Hopkins) of the Scottish Agricultural College. Jessica’s work on the development of a simple, reliable, and humane method for killing poultry is now nearing completion and, thanks to the continuing support of HSA members and supporters, over the last year the HSA has been able to expand this programme by advertising and awarding two further Research Training Scholarships. We hope that these studies will have a major impact on welfare and also help develop the cadre of scientists with expertise available to address welfare at slaughter issues.

Research, while important, is not enough on its own – the ideas and findings have to be implemented. Over the last year the HSA has undertaken a number of educational projects, including a workshop for Animal Welfare Officers to help disseminate information about the recent revisions to legislation in the UK, and to encourage the formation of an AWO institutional body that, amongst other things, could help deliver CPD to maintain and improve standards. There are many parts of the world where much could be achieved by improving understanding of humane transport and slaughter. Consequently, the HSA has continued to expand its international activities. Over the last year the number of online guides has been increased and Spanish translations have been made freely available on the HSA’s website which should greatly broaden their readership. Another very important project has been the HSA’s second international symposium, which was the first to be held outside the UK.

None of this could be done without the generosity of members and supporters and we are very grateful to all those who have supported the HSA’s vital work by making legacy provision and donations.
**HSA Research Training Scholarships**

The HSA has funded two Research Training Scholarships which will enable two PhD students to carry out research that aims to develop significant practical improvements to slaughter methodologies.

Carlos Rebelo will work at the Royal Veterinary College under the supervision of Drs Troy Gibson and Siobhan Abeyesinghe where he will assess electrical stunning devices which may be used in the slaughter of turkeys, ducks or geese raised by small-scale producers. Carlos aims to develop constant current stunners and/or to develop or refine electrode types, which may increase the likelihood of an immediate effective stun, compared to existing constant voltage devices.

The project will examine the effects of the techniques not only on animal welfare but also on meat quality, ensuring that if they offer animal welfare benefits they will be attractive to small-scale producers.

Awal Fuseini will work under the supervision of Steve Wotton and Professor Toby Knowles at the University of Bristol Veterinary School to develop and test a novel electrical stunning device for cattle.

The Single Pulse Ultra-high Current (SPUC) device is being developed to render cattle rapidly but reversibly unconscious and offer a longer period of unconsciousness than conventional electrical stunning. This will reduce the possibility of animals regaining consciousness before the slaughter process is completed by neck cutting. Typically, slaughter of stunned animals is considered Halal if the animal is rendered unconscious but remains capable of regaining consciousness until the moment the neck is cut.

Conventional electrical stunning may render animals unconscious for less than a minute, which research has shown is shorter than the time some animals take to lose consciousness following the neck cut in ritual slaughter. This means some animals might begin to regain consciousness after the neck cut. SPUC has the potential to render animals unconscious for several minutes. Awal’s project will investigate the optimum electrical parameters for SPUC stunning to maximise the duration of the stun and reduce post-stun convulsions which can compromise operator safety and delay neck cutting.

Awal will consult with Muslim authorities to discuss whether the device is acceptable both on religious as well as animal welfare grounds.

Both these projects aim to significantly improve the welfare of animals at slaughter. They demonstrate the HSA’s commitment to working with stakeholders in meat production to provide practical ways of improving welfare and at the same time train the next generation of animal welfare scientists.

**HSA research projects**

The HSA has been assisting with field work and data collection for a Defra-funded project ‘Study to investigate non-penetrating percussive blow to the head as a humane killing method for piglets, kids and lambs up to 5 kg’. Data collection has now been completed on piglets. Further work involving kids and lambs should be completed by mid-2016 and a report is planned for March 2017.

The HSA previously contributed to research at the RVC which investigated the energy values of captive-bolt stunners mid-2016, and a report is planned for March 2017.

**Award for significant advances in humane slaughter**

Very large numbers of farmed livestock are slaughtered daily around the world to provide food and other resources for human benefit. It is important that slaughter methods are as humane as possible – that is they reliably result in immediate loss of consciousness and death without fear or pain. During the last 100 years or so, great advances have been made in this field and work in pursuit of further improvements is continuing.

In order to help give recognition to important contributions made in this field, and to help promote interest in further advances, the Humane Slaughter Association launched an award scheme in 2008 for individuals or organisations (anywhere in the world) whose work has resulted in significant advances in the humane slaughter of farmed livestock — The HSA Humane Slaughter Award.

The 2015 winner of the Humane Slaughter Award is the Danish Meat Research Institute (DMRI).

The Institute has had a major input in improving the welfare of pigs at slaughter. The group combines animal welfare expertise with extensive technical knowledge. Members serve as experts for the European Food Safety Authority (EFSA), national and international authorities, the industry and NGOs, and undertake educational activities on behalf of the European Commission, national authorities and the meat industry.

The DMRI has been particularly influential in encouraging the transport of pigs from farm to slaughter in groups. Keeping the animals in natural social groups improves welfare, and it is notable that noise levels have dropped in facilities that have implemented the technique. The group has also provided advice on making animal transport systems more humane and has set up systems for traceability and documentation of animal welfare. The resulting information regarding the animal welfare level at the slaughterhouse is used by the meat industry, both as a control and to improve handling procedures and technical performance with the aim of constantly improving animal welfare.

Nathan left the staff in July 2015 to take up a position with Compassion in World Farming (CIWF). We thank him for all his work at the HSA and wish him well in his new position.

Susanne Steiler of the Danish Meat Research Institute at the HSA International Symposium in Zagreb, Croatia, July 2015 where she received the 2015 HSA award for significant advances in humane slaughter on behalf of the Institute.
HSA International Symposium 2015: 
Recent Advances II 
Zagreb, Croatia 16-17th July 2015

The HSA held its first international symposium in 2011. The event, held at the Portsmouth Historic Dockyard, proved extremely successful, attracting over 250 speakers and delegates from around the world. This year the HSA has built on that success and developed its international influence and profile by organizing a second two-day international symposium in Zagreb, Croatia, in July 2015.

The 2015 symposium takes forward the work of the European Union-funded AWARE project, which aimed to promote integration and increase the impact of European research on farm animal welfare. HSA and UFAW staff worked with Dr Mario Ostović, of the Faculty of Veterinary Medicine, University of Zagreb to organize this meeting which attracted delegates from 25 countries.

The meeting also attracted some very influential keynote speakers, including a presentation by HRH Princess Alia Al Hussein who spoke on improving animal welfare at slaughter in Jordan, including promotion of pre-slaughter stunning, a topic of considerable current interest.

Animal Welfare Officer Seminar

As a result of numerous enquiries to the HSA about the requirements relating to the appointment, training and certification of Animal Welfare Officers (AWOs) in meat production operations (contained in EU Regulation EC 1099/2009, and soon to be implemented in England), the HSA organized a seminar for the meat and livestock industry entitled ‘The Changing Role of the Animal Welfare Officer in the Light of EC Regulation 1099/2009’. This took place on Wednesday 29 April at the East Midlands Thistle Hotel, Castle Donnington and was attended by over 100 delegates, including representatives from meat producers, industry organisations, manufacturers, researchers and government bodies.

The morning speakers were Rebecca Garcia from Defra, Steve Walton from the University of Bristol, Craig Kirby of AIMS, and Collin Willson of FSA Wales, who respectively discussed the legal framework, training, certification and experience of implementing EC 1099/2009 in Wales. After lunch, industry perspectives on the practical issues of implementation were provided by Tony Higginson of Woodhead Brothers, Rob Barker of Cargill, and Claire White from Dunbia Ltd. This was followed by a question and discussion session chaired by Lewis Grant of the VPHA.

The upshot of the seminar was that, despite highlighting some potential practical difficulties – in particular the requirement that an AWO’s training for certificates of competence in all areas of his responsibility be completed within a three-month time period, the panel of speakers felt that the legislation provided a good framework for the systematic implementation of high welfare practices and for facilitating ongoing improvement. From an industry perspective, there should also be potential benefits for efficiency, productivity and marketing.

Feedback forms from the delegates and speakers suggested this had been a very successful event, which provided much valuable information to the attendees and a useful forum for discussing both species- and premises-specific issues. It was also noted that many felt that the networking opportunities were almost as important as the subject matter of the seminar. The HSA office has received a number of enquiries about future such events.
**Education & Training**

The HSA’s comprehensive range of training services in livestock handling and welfare, built on its long experience and expertise, is a key element in establishing and maintaining high standards of welfare. Below are some examples of the way the HSA helps promote best practice.

**Training activities, lectures and other initiatives**

Over the year the HSA has undertaken

- emergency slaughter courses to APHA staff at Pirbright, BQP field staff and Irish Ferries staff
- evening talks on the HSA’s work to Bottisham Shepherds’ Club and the Lancashire Pig Discussion Group
- courses on the safe operation and maintenance of firearms and captive-bolt equipment to RSPCA trainee inspectors, Moulton College farm staff and Jelen Deer Services
- animal welfare assessments for a number of meat production and processing companies
- a course in poultry welfare at the time of killing for small-scale producers, held at Plumpton College, East Sussex.

During HSA Education & Training events, the HSA-designed model poultry were used to familiarise veterinary students and smallholders with the techniques used in the application of restraint, stunning and killing equipment. The trainees reported that the models were very useful in allowing them to practise their humane slaughter techniques for the first time, and before they need to slaughter or kill live birds, enabling them to feel more confident and to protect bird welfare as much as possible.

**Tertiary education**

During the year the HSA also undertook

- lectures to veterinary students at Cambridge University and animal science students and trainee livestock auctioneers at Harper Adams
- a lecture to veterinary students at the University of Liverpool on legislation to protect animal welfare at slaughter
- lectures in animal welfare at the time of killing at the University of Edinburgh, the University of Liverpool (fish welfare at slaughter for veterinary medicine students) and the Royal Veterinary College (poultry welfare during small-scale and large-scale slaughter and killing for vet students)
- two online lectures for the University of Edinburgh’s distance-learning MSc in International Animal Welfare, Ethics and Law. Students registered on this course included vets and doctors based in Canada, Iceland, Malawi, Oman, Uganda, and the USA.

**Dorothy Sidley Memorial Scholarship 2015**

The HSA has awarded a Dorothy Sidley Memorial Scholarship to Emma King of the RVC to support her project titled “Pathophysiology of captive-bolt stunning in turkey: comparison between the Turkey Euthanasia Device (TED) and the CASH Poultry Killer (CPK).”

The project aims to address the need for evaluation of new stunning equipment used for turkeys, in terms of performance, animal welfare and maintenance. The focus of Emma King’s study is on gross and histological examination of brain pathology following the use of the TED and CPK devices. This is an important area of work and the HSA looks forward to seeing the results.
Jessica Martin (née Hopkins), the HSA’s inaugural research training scholar, has successfully completed her PhD study into humane mechanical methods for killing chickens. Jess was based at Scotland’s Rural College (SRUC) in Ayr and during her HSA-funded PhD she received a number of awards and commendations for her research and presentation skills, which will serve her well during her future career as a research scientist in animal welfare.

Worldwide, billions of poultry may need to be killed on-farm each year, if birds are sick or injured or for small-scale slaughter. Since January 2013, in Europe, the use of manual cervical dislocation (MCD) as a killing method for poultry has been restricted by Council Regulation 1099/2009 on the protection of animals at the time of killing, following reported welfare concerns. The aim of Jess’s project was to design a mechanical device to kill chickens humanely on-farm and provide a competitive replacement for MCD.

Four mechanical devices were designed and prototyped: Modified Armadillo (MARM); Modified Pliers (MPLI); Modified Rabbit Zinger (MZIN) and a Novel mechanical cervical dislocation glove (NMCD). The devices were tested for killing efficacy in three laboratory experiments, assessing their performance on chicken cadavers, anaesthetised birds and conscious birds. The reliability and welfare impact of the devices, along with comparisons with a control method (MCD) were evaluated via post-mortem analysis, reflex and behaviour durations, and characteristics of electroencephalography (EEG) analysis.

Of the four tested devices, the NMCD device showed the most promise for poultry stock-workers and keepers. The final experiment explored the user-reliability and practicality of the NMCD device in a commercial layer hen farm and a broiler farm. When applied by multiple users the NMCD device did not match the killing performance of MCD; however the NMCD showed promise and the study highlighted the need for refinement of the training protocol, to encompass the wide variation in MCD techniques and experience and to develop Jess’s novel device into a marketable product which any individual could purchase and use as a humane method for killing chickens.

Jess presented her PhD research at the HSA International Symposium in Croatia in July 2015.

Conferences and meetings

In February 2015 at a Compassion In World Farming (CIWF) meeting, HSA Technical Officer Jade Spence gave a presentation to industry representatives on making improvements to conventional electrical waterbath slaughter systems, focussing on the shackle line, the monitoring of stunning parameters and how to assess the effectiveness of neck cutting for bleeding stunned birds.

Jade also attended the Halal Food Authority’s (HFA) first-ever seminar for UK industry in April 2015 in Greenford. A number of international speakers attended, as did the 2015 HSA RTS scholar Awal Fuseini and his supervisor Steve Wotton, who gave a presentation on effective electrical stunning of poultry intended for Halal products.

Other events attended during the year:

- The Association of Meat Inspectors Seminar, Sept. 2014;
- Veterinary Public Health Association (VPHA) Autumn Meeting, Nov. 2014;
- Royal Smithfield Festival, Peterborough, Dec. 2014;
- British Poultry Council (BPC) Annual Awards at the House of Commons, Dec. 2014;
- Agri-Food Charities Partnership (AFCP) Student Forum, Mar. 2015;
- Livestock Auctioneers’ Association (LAA) AGM and Dinner, Mar. 2015;
- VPHA Spring Meeting, Mar. 2015;
- British Veterinary Association (BVA) Animal Welfare Forum, June 2015;
- VPHA Study Tour to Hungary, June 2015;
- MEATUP technical event at NEC, June 2015.
Information on the waterbath method and illustrated for example. The online guide provides background detailed information, compared to AWOs or supervisors. It will be immensely helpful to the personnel working with live birds, persons responsible for setting-up and maintaining slaughter equipment, official veterinarians, meat inspection officers and those who teach others how to protect bird welfare (eg persons who train others for proficiency qualifications or for certificates of competence in animal welfare at slaughter).

The Guidance Notes provide information on the various types of equipment available to optimise bird welfare during this method of slaughter and give examples of Standard Operating Procedures (SOPs) for primary and back-up stunning equipment, as well as guidance on risk assessment (HACCP) for animal welfare. The document contains illustrations that explain how equipment works and how to identify and monitor effective stunning and effective neck cutting and bleeding. The Guidance Notes are intended for a global audience and make reference to systems used outside Europe. Dr Mohan Raj, Visiting Fellow of the University of Bristol’s School of Veterinary Science remarked: “…very well written and [will] be immensely helpful to the industry”.

To mark the fiftieth anniversary of the Winston Churchill Memorial Trust (WCMT), HM Queen Elizabeth II hosted a reception for over 300 Churchill Fellows at Buckingham Palace on Wednesday 18 March. The HSA’s Technical Director, Charlie Mason, was honoured to be chosen, along with ten others, to represent the East Midlands Association of Churchill Fellows at this prestigious event.

The WCMT was set up at the request of Sir Winston Churchill, following his death, to give the opportunity to UK citizens of all ages, and from all walks of life, regardless of qualifications, to travel overseas to study areas of topical and personal interest, to gain knowledge and bring back best practice for the benefit of others, their profession and community, in the UK. Charlie was a Churchill Fellow of 1990, undertaking a travelling fellowship to Holland, Denmark, Belgium and Greece to study livestock marketing and slaughter in those member states, prior to the harmonization of European legislation controlling animal welfare in those areas.

HSA Technical Director meets HM The Queen

Guidance Notes on Electrical Waterbath Stunning of Poultry

In Europe, recommendations to phase-out electrical waterbath stunners for poultry (due to animal welfare concerns) were not included in Council Regulation 1099/2009 on the protection of animals at the time of killing because an impact assessment revealed this was not economically viable in 2009. Therefore, operating electrical waterbath stunners to a high standard remains critical for protecting poultry welfare and, following a final external peer-review, in spring 2015 the HSA published its Guidance Notes No.7 on Electrical Waterbath Stunning of Poultry.

This new HSA publication provides comprehensive good practice guidance that is intended to assist animal welfare officers (AWOs), supervisors and managers of personnel working with live birds, persons responsible for setting-up and maintaining slaughter equipment, official veterinarians, meat inspection officers and those who teach others how to protect bird welfare (eg persons who train others for proficiency qualifications or for certificates of competence in animal welfare at slaughter). The Guidance Notes provide information on the various types of equipment available to optimise bird welfare during this method of slaughter and give examples of Standard Operating Procedures (SOPs) for primary and back-up stunning equipment, as well as guidance on risk assessment (HACCP) for animal welfare. The document contains illustrations that explain how equipment works and how to identify and monitor effective stunning and effective neck cutting and bleeding. The Guidance Notes are intended for a global audience and make reference to systems used outside Europe. Dr Mohan Raj, Visiting Fellow of the University of Bristol’s School of Veterinary Science remarked: “…very well written and [will] be immensely helpful to the industry”.

Online Guide Series

HSA Guidance Notes No.7 have been adapted into an HSA online guide to electrical waterbath stunning of poultry, which is intended for abattoir personnel who work with live birds but who, for their particular duty, do not require as much detailed information, compared to AWOs or supervisors for example. The online guide provides background information on the waterbath method and illustrated guidance, including video footage, to help viewers understand the technology and to perform their jobs competently and safely, with bird welfare in mind.

Humane Harvesting of Fish and Transport of Livestock have also been added to the series, bringing the total number of online guides to eight. Seven of these guides are now also available in South American Spanish, thus making them more accessible to a very large audience, and further translations into Chinese are underway.
SUMMARY OF FINANCIAL ACTIVITY YEAR ENDED 31 MARCH 2015

Incoming resources
£
2014/15
240,708
2013/14
528,817

Less: Costs of generating funds
60,438
52,267
71,274
60,438

between gains/(losses) for the year
(98,221)

Other recognised gains and losses:

Net realised gain on investments
177,337
47,491

Balance carried forward
4,346,878
4,105,742

Net movement in funds
241,136

Unrealised gain/(loss) on investments
162,020
(35,363)

Total resources expended
359,329
345,281

Current assets:

Net (outgoing)/incoming resources
between gains/(losses) for the year
(98,221)
183,536

Other recognised gains and losses:

Net realised gain on investments
177,337
47,491

Current liabilities

Net current assets
254,119

Creditors:

Net assets
4,346,878

Funds:

Balance carried forward
4,105,742

Funds:
Unrestricted
4,346,878
4,105,742

Basis of Opinion

The summarised accounts were approved by the Trustees and signed on their behalf on 22 July 2015.

The summarised accounts set out above have been extracted from the full accounts and have been prepared in accordance with the Charities Act 2011. The full accounts have been audited and the auditors’ opinion was without qualification. The accounts will be filed with the Charity Commission after the General Meeting on 14 October 2015. Full accounts and the audit report can be obtained from the Secretary, The Old School, Brewhouse Hill, Wheathampstead, Herts AL4 8AN.

Independent Auditors’ Statement to the Trustees of the HSA & CJA

We have examined the summarised financial statements that comprise the summary statement of financial activities and summary balance sheet. The Basis of Opinion

You are responsible as the Trustees for the preparation of the summarised financial statements. We have agreed to report to you our opinion on the summarised financial statements’ consistency with the financial statements, on which we reported to you on 22 July 2015.

Basis of Opinion

We have carried out the procedures we consider necessary to ascertain whether the summarised financial statements are consistent with the full financial statements from which they have been prepared.

Opinion

In our opinion the summarised financial statements are consistent with the full financial statements for the year ended 31 March 2016.